

KNOWLEDGE

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OFFICIAL SAFETY MAGAZINE OF THE U.S. ARMY

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ARMY STRONG



U.S. ARMY CENTER OF EXCELLENCE
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We welcome your feedback. Please e-mail comments to safe.knowledge@conus.army.mil.

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PRESERVING BAND OF

As the new director of Army safety and commanding general of the U.S. Army Combat Readiness/Safety Center (USACRC), I am proud to have the opportunity to lead this team of dedicated professionals who strive every day to protect our Soldiers, Families and Civilians.

The transformation of the Army's safety culture has developed into a comprehensive and proactive approach to accident prevention. Leaders at every echelon have led this transformation in making the Army – both on and off duty – a proactive, prevention-based and accountable fighting force.

Brig. Gen. Bill Forrester has done an incredible job the past two years in focusing the efforts of the USACRC and helping Army Leaders understand that it takes a comprehensive approach to promote safety. The key to these efforts has been ensuring

Leader engagement at every level of our Army.

At the Soldier level, by incorporating composite risk management into their decision-making process, our Soldiers have clearly taken greater responsibility for their personal safety, as well as mission success. While I'm not a fan of statistics, it is evident Soldiers and Leaders "get it" by the 46-percent decrease in on-duty fatalities across our Army in fiscal 2008 (compared to fiscal 2007).

While the Army closed this fiscal year with an overall 16-percent decrease in Soldier fatalities, there is still

“SAFETY is not a **DESTINATION**; it is a **JOURNEY** and, as such, must **CONTINUALLY** be **ADAPTED** to an **EVER-CHANGING ENVIRONMENT.**”



OUR BROTHERS

much that must be done to prevent off-duty losses (which have increased 6 percent and account for almost 75 percent of our losses). The many on-duty safety programs and policies that protect our Soldiers, our “Band of Brothers,” in both combat and in garrison (on duty), must also be applied in our approach to off-duty safety. We must remember that our “Band of

Brothers” does not dissolve when the day ends and we head home, nor is it limited to those who wear a uniform. It encompasses all the members of our Army team, 24/7.

Safety is not a destination; it is a journey and, as such, must continually be adapted to an ever-changing environment. Leaders must help their Soldiers navigate and

manage risk, both on and off duty; it is our responsibility and our mission. Composite risk management must be inherent in every decision, and we, as Leaders, must remain vigilant to protect against risk and prevent accidents in order to sustain our “Band of Brothers.”

Finally, communication is critical to the success of our safety programs and initiatives. We must continue to take advantage of information-gathering and sharing resources such as the Army Readiness Assessment Program and Battle Command Knowledge System. These tools provide Leaders valuable insight into the safety climate of their command and facilitate the flow of knowledge.

Promoting safety is a constantly evolving mission and Leaders must continue to employ outside-the-box thinking to communicate with our Soldiers, Families and Civilians. Your input provides us valuable information on areas we

can improve in order to raise awareness and prevent accidents and fatalities. I ask Soldiers, Family members and Civilian employees to share with the USACRC ways we can improve the Army safety programs and join us in the journey to a safe, Army Strong team.

Again, I am proud and humbled to be serving as the director of Army safety and the commander of the USACRC. I look forward to visiting our formations and Soldiers across our Army. I thank you all for your efforts over the past year and ask for your continued help in protecting our most vital resource, our Soldiers, both on and off duty, in combat and back home, and preserving our “Band of Brothers.”

William T. Wolf
Brigadier General, USA
Commanding

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ARAP
ARMY READINESS ASSESSMENT PROGRAM

Army Safety & Knowledge and Experience ON DEMAND to the Army Community

Safe for the Holidays

FRANK MCCLANAHAN
U.S. Army Combat Readiness Safety Center
Fort Rucker, Ala.

The winter holiday season is a time of joy, hope, fellowship and giving thanks for our blessings. But it also involves activities that expose each of us to increased risk. Following these guidelines will help make your holiday season safer and more enjoyable.



Traffic Safety

Hazardous weather and road conditions, reduced hours of daylight, alcohol, fatigue and vehicle breakdowns, which are all common to the holiday season, can make operating vehicles an extremely dangerous undertaking. During the coming holidays, the likelihood of being involved in an accident on the highways and interstates is greatly intensified. Predominant factors are the increased use of intoxicants and the tendency to travel long distances during this season.

Fatigue and excessive speed can be natural byproducts of these factors. As a fatigued driver becomes less alert, his ability to judge distance, depth and speed is reduced. Accidents involving sleepy drivers are usually the most serious because a sleeping driver cannot exercise any degree of control. Fortunately, drivers can take measures to ensure their personal safety – and that of their passengers – by keeping these precautions in mind:

- Wear your seat belt and make sure your passengers buckle up. If you're involved in an accident, your chances of avoiding serious injury or death are significantly greater.



“ DURING the coming HOLIDAYS, the LIKELIHOOD of being involved in an ACCIDENT on the highways and interstates is GREATLY INTENSIFIED. ”

Furthermore, wearing a seat belt reduces the secondary impact of an accident, which is the collision between the passenger and the interior of the vehicle.

- Get adequate rest before and during the trip, and avoid driving more than eight hours in one day. Be sure to take short, 15-minute breaks every hour.

- Avoid night driving as much as possible and leaving for a trip after performing a full day of duty.

- Avoid alcohol before and during the trip. After consuming a few drinks, a driver is unable to accurately judge speeds and distances, follow traffic patterns or react quickly to hazards or emergencies.

- Maintain adequate ventilation in the vehicle at all times. This will reduce the possibility of carbon monoxide poisoning. Ensure the entire exhaust system is completely free of leaks.

- Operate your vehicle at speeds appropriate for weather and road conditions and avoid overdriving your field of vision.

- Have your vehicle inspected for proper operation of brakes, steering, windshield wipers, tires, heater and defroster, lights and the exhaust system. Mechanical safety of the vehicle is very important all year, especially in

the winter as conditions demand more from your vehicle and you.

Holiday Decorations

Decorating for the holidays is a fun and exciting event. However, while decorations help set the seasonal mood, they can also



set the conditions for a disaster. If your family tradition calls for a live Christmas tree, be sure to select a recently harvested tree and store it outside until you're ready to set it up. Inspect the tree to make sure it's not too dry by bending the needles between your thumb and forefinger to see if they break. You can also bounce the trunk of the tree against the ground a few times to see if a large number of needles fall off. Cut the tree at an angle beginning at least 1 inch above the original cut, place the tree in a container of water and brace securely.

When you set up the tree, place it away from radiators, stoves

or other sources of heat such as lighted candles. Ensure Christmas lights and wiring are Underwriters Laboratories (UL) approved and used for interior or exterior purposes as specified (outdoor equipment will be weatherproof). Discard frayed or worn wires and light sets before short circuits occur. Tree lights should also be checked daily to determine drying effects on needles. When needles begin to turn brown, take the tree down. As a preventive measure, unplug the lights on your tree and all other decorations every time you leave your home or go to bed.

Artificial, metallic-type trees have definite fire safety

advantages over live trees.

However, faulty wiring or light sets can energize the entire tree, causing a potentially deadly electrical shock or severe burn to individuals coming in contact with it. Illuminating the tree with off-the-tree spotlights or floor lights will virtually eliminate the danger of shock or fire. Lighted candles are an almost certain invitation to fires on any tree and should be kept a safe distance away. When decorating a tree, glass or metal decorations are recommended. Cotton, paper or celluloid decorations are a fire hazard and must not be used on or around trees. Also keep in mind that some



A WORD ABOUT

There's nothing quite like the tastes and smells of the holiday season – roasted turkey, dressing and sweet potato casserole. Top it all off with a piece of pecan pie and you're in holiday heaven. Before carving your bird, however, make sure you follow the proper food safety guidelines.

You can go a long way to prevent the spread of food-borne illnesses by keeping in mind four simple steps: clean, separate, cook, chill. Wash your hands thoroughly with hot, soapy water every time you handle raw meat, poultry, seafood, vegetables and eggs, and keep these food items separate in order to prevent cross-contamination. (You should also keep these foods separate in your grocery cart and grocery bags.)

Clean your work surfaces and wash utensils, knives, cutting boards, sponges and towels in hot, soapy water after every use. If your cutting boards have developed scratches and cuts from extended use, discard them and purchase new ones. This will protect you and those you cook for from the bacteria that can hide within the scratches.

Use a thermometer to measure the internal temperature of food when cooking, and ensure the type of thermometer is appropriate for the method by which you cook. For example, you would choose an oven-safe bimetallic-coil thermometer if you were going to leave it in the food the entire time it cooks in the oven. The U.S. Department of Agriculture recommends the

decorative houseplants are poisonous. Keep plants such as holly and mistletoe out of the reach of small children and pets. Ingestion of these plants can be dangerous – possibly even fatal.

Children's Toys

As you make your toy purchases this year, be sure to read the safety assessments prepared by consumer advocacy groups. Some simple rules to remember are to avoid toys that shoot projectiles, have sharp edges or can strangle or provide an electrical shock to a child. Always buy a toy that is age appropriate (recommended

age guidelines are typically printed on the package).

If you plan to put a new bicycle under the tree, don't forget to include the protective helmet. Remember that you have a responsibility to teach your child bicycle safety and test them on their knowledge and application of the "rules of the road."

Amid the chaos of the holiday season, we sometimes forget that we can never give safety a day off. Putting safety in the forefront of your celebrations will help ensure you and your loved ones are around to give thanks for years to come. <<



UT THE BIRD

FRANK MCCLANAHAN
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

following as minimum safe internal food temperatures:

- Beef, veal, lamb, steaks, roast – 145 F
- Fish – 145 F
- Pork – 160 F
- Ground beef, veal and lamb – 160 F
- Egg dishes – 160 F
- Turkey, chicken and duck (whole, pieces and ground) – 165 F

Refrigerating foods is another important step in preventing food-borne illnesses. Once you arrive home with the groceries, immediately place the meat, poultry, eggs and other perishable items in the refrigerator or freezer. The Partnership for Food Safety recommends a refrigerator should be set at 40 F or lower

and a freezer should be at 0 F or lower. The following steps are recommended for refrigerating foods:

- Divide large amounts of leftovers into shallow containers for quicker cooling in the refrigerator.
- Thaw frozen food in the refrigerator, cold water or microwave – never at room temperature.

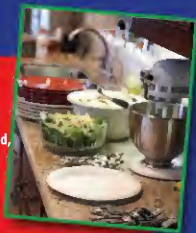
• Marinate food in the refrigerator.

• Clean out the refrigerator and discard old food on a regular basis.

Food safety is a proactive measure. Adhere to the food safety guidelines above when preparing holiday meals and you'll leave food-borne illnesses out of your celebration. <<



After your food has been properly cooked, never place it on a plate or platter that previously held raw food and don't handle it with contaminated utensils.



STEVE KURTIAK
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Christmas U

November is here and you're wondering, "Hmmm ... what do I get my significant other for Christmas?" Well, if Santa is delivering a motorcycle this Christmas, or if there already is one in your garage waiting for the snow to melt, you might consider buying motorcycle protective gear. You say your special rider already has some gear? Well, maybe it's time for something new. Either way, you can't go wrong wrapping something designed to be worn by a motorcycle rider and placing it under the tree. Here are some ideas on what to buy.

Helmets

Helmets are always a good choice – all you need to know is if the rider wants a full-face, an open-face or a half helmet. For maximum protection, full-face helmets are the best way to go. Good helmets vary in price from about \$90 to more than \$700. Make sure the

helmet meets Department of Transportation (DOT) specifications. Also, it doesn't hurt if it meets the Snell specifications, as well. Oh, yeah, you will also need to know what size noggin the rider has.

Already have a DOT/ Snell helmet? Good. Does your rider have eye protection? When you purchase eye protection, it must meet or exceed the American National Standards Institute (ANSI) code Z87.1. There are far too many styles to go into

any detail, but make sure your rider has a pair – whether they're goggles or glasses. That windshield on the front of the bike isn't enough to protect the eyes.

Footwear

This important item is often overlooked. Flip-flops or sandals are a definite "no-no." Good, sturdy, over-the-ankle protection is what a rider needs. Rubber soles with a good tread design and a low heel are best. Stay away from boots that have deep treads.



Wishes

These treads can get hung up on your foot pegs, making for some “exciting” moments when you try to brake or shift. Also, avoid hard-soled footwear, which can be very slippery and unexpectedly dump you and your bike when you put your feet down at a stop. Replacement parts for motorcycles aren’t cheap and you’ll lose lots of “cool” points if your foot slips and you drop your bike at the gas station. Does your rider own a cruiser or a sportbike? These are the two most popular types of motorcycles currently being ridden, and your rider will probably want footwear that complements the bike.

Jackets and Gloves

The best upper garment to wear is a jacket that is designed for a rider. Leather, textile or even mesh jackets will provide excellent protection against the elements. Hitting a bumblebee at 50 mph is painful – and anyone who has ever ridden knows what I mean. Many of these jackets have elbow, shoulder and spine protection in the form of pads, and leather is just plain tough. This type

of protection will keep your skin from looking like raw hamburger should you go tumbling down the road.

Many riders have more than one pair of gloves, each tailored for the climate – whether it’s hot, cold or wet. The bottom line is the glove should fit well and not interfere with controlling the bike. Many gloves also include extra padding on the fingers and knuckles. That helps protect a rider’s fingers from painful “dings” when road debris is kicked up by traffic.

Cover Your “Six”

When it comes to pants, dress for the slide – not the ride. Like the jacket, pants should be designed for motorcycle riding. Pants are available that include knee and hip protection. Some riding pants are designed to fit over your regular pants. Chaps provide protection for the legs, but lack protection for your fourth point of contact. If your rider is “jump qualified,” they’ll know what I mean. If your rider owns a dirt bike or an all-terrain vehicle, then you’ll want



to add some knee and shin protection along with gloves featuring padded fingers and knuckles.

A good rain suit is a must. We get plenty of rain here in the South, and sometimes it comes down in buckets. One- or two-piece rain suits are available and are well worth the money. Quite a few years ago, I made the mistake of wearing my Army-issue rain gear on a ride. I paid dearly for my lack of judgment and suffered a terrible rash that took many days to clear up.

While a motorcycle dealer is a good place to look for gear, online shopping works, as well. Before you spend your money, ask plenty of questions and do some research. And while you’re at it, buy some gear for yourself. Good riding gear is a gift that not only keeps on giving; it’s a gift that helps riders keep on living.◀

THE IMPORTANCE OF THE CREW MISSION BRIEF

COMPILED BY THE KNOWLEDGE STAFF
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Do you know the importance of the crew mission brief? Army Regulation (AR) 95-1, *Flight Regulations*, paragraph 2-14, describes in detail the mission approval process and the duties and responsibilities of the crew, briefing officer and final approval authority. The following scenario places emphasis on the importance of understanding the mission approval process and the consequences if the aircrew isn't approved or briefed for a follow-on mission.

In this accident scenario, the troop commander and troop standardization pilot selected an OH-58D combat crew two weeks before the mishap occurred. The pilot in command (PC) had more than 400 total hours, of which over 300 were in the OH-58D. He had passed his PC evaluation and had a total of nearly 30 hours of PC time. The pilot (PI) had more than 350 hours, of which over 275 were in the OH-58D.

The crew was conducting high-altitude and desert environmental flight training in preparation for an upcoming deployment. The crew had previously conducted some high-altitude and desert environmental training; however, the PI had not completed all his training.

The weather conditions were pressure altitude (PA) 5,100 feet and temperature 25 C. The crew had computed their performance planning card (PPC) for PA 1,000 feet and temperature 14 C, which was the normal PA and temperature of their home duty station.

The actual mission briefed and approved by the TF commander was an air assault mission. The crew was part of a scout weapons team (SWT) consisting of OH-58D aircraft. The SWT crews received notice the mission was to take place in 24 hours; meanwhile, the TF operations officer

issued a warning order followed by an operations order. A thorough air mission brief (AMB) was conducted the night before the mission by the TF operations officer and TF staff. The "accident" aircraft PC, the PI from the other SWT, the mission briefing

commander attended the CAR. Everyone knew their assignments and what they were supposed to do to complete this mission successfully. The mission was conducted as briefed with no incidents and was well planned and rehearsed.

Following the completion of the mission, the SWT AMC decided the team had time to conduct additional high-altitude and environmental flight training. The team departed the area and proceeded to the forward arming refuel point, discussing the additional training they wanted to do. They had not planned for any additional training; therefore, they had no real training plan or assigned tasks to conduct. The troop commander provided guidance that if they had additional time after the mission to go and do more environmental training. However, the TF commander who was the final approval authority for the mission had no knowledge of this additional training because these details were not documented on the risk assessment worksheet.

Upon refueling, the SWT departed for a training area they had used previously to conduct their high-altitude and environmental training. They arrived at this training area and began conducting dust landings and SWT target handovers. Several minutes later, they decided to go to



officer and the troop commander were in attendance for the AMB. The SWT air mission commander (AMC) and PI of the "accident" aircrew did not attend the AMB due to crew rest.

On the day of the mission, the crew awoke and finished their final mission planning based on the AMB they received the night before. Since all crewmembers were not present at the AMB, they conducted a crew brief one hour before the combined arms rehearsal (CAR). It was at this time the SWT AMC received his AMC duties. The TF commander and his staff conducted the CAR. All crews, the briefing officer and the troop



another training area. While en route to this training area, the AMC spotted a canyon he thought would be a good place to conduct maneuver training. According to the AMC, the purpose of this training was to limit their exposure times as they proceeded through the canyon.

The AMC and his PI conducted the first set of maneuvers through the canyon while the "accident" aircraft positioned atop a mountain to observe the AMC's aircraft. After the AMC and his PI each made a pass through the canyon, the "accident" aircrew proceeded to the beginning of the canyon with the PI on the controls. The PI made his run through the canyon as the AMC had previously. The AMC provided overwatch from the same mountain vantage point as the accident aircraft had used previously. The AMC landed at the top of the mountain and filmed the "accident" aircrew as they made their two runs through the canyon.

Upon completion of the PI making his pass through the canyon, the PC took the controls and moved back to the start of the canyon. The PC was approximately 150 feet above the canyon floor as he maneuvered through the canyon. He was about halfway through his run when he noticed he was below his bucket speed (which is synonymous with max endurance airspeed). The PC applied forward cyclic to gain some airspeed; however, when

he began to level the aircraft, it continued to sink and struck the canyon wall, destroying the aircraft.

What Went Wrong?

The actual cause of this crash was pilot error. Nevertheless, just as important, errors were also made in the mission brief and approval process for this mission. The mission was actually briefed and approved for only the first mission; however, the SWT decided to conduct an unplanned follow-on training mission at the last minute. The first mission was properly planned, briefed and rehearsed in accordance with AR 95-1, paragraph 2-14, and it showed by the conduct and success of the mission. Everyone knew their role and task to perform the mission.

The follow-on training had not been scheduled, briefed or approved. The risk assessment matrix did not provide any risk assessment for the training. In fact, the crew had not planned for the additional training that included high-altitude tactics and maneuver training. The "accident" aircrew PPC was incorrect for the mission as much as 4,000 feet PA and 11 C temperature. The PPC error did not cause the accident, but it demonstrated the inexperience of the accident crew.

Additionally, the only guidance or semblance of an aircrew brief the troop commander gave the SWT was to just go out and do some

additional environmental training. He clearly did not brief or get approval in accordance with AR 95-1. Without a crew brief and a plan, the crew did just that. In doing so, the PC exceeded the aircraft pitch attitude limitations according to the -10 operator's manual. When he tried to recover the aircraft from the dive, it continued to sink and the PC failed to apply any control input that would correct the sinking. Also, the PI did not adhere to the aircrew coordination training and challenge the PC when he placed the aircraft in a steep dive and exceeded the aircraft pitch limitations. The PC and the PI actions showed crew inexperience operating in high-altitude desert terrain and as a combat crew. This was possibly due to lack of crew experience. They struck the canyon wall approximately 80 feet above the canyon floor, which sent the aircraft cartwheeling along the face of the canyon wall, striking the ground four times before it came to rest on its left side. The crew received non-life-threatening injuries; however, the aircraft was destroyed.

AR 95-1 is specific in the requirements and responsibilities of crewmembers, briefing officers and final approval authorities. This scenario shows that when a crew brief is properly conducted, the mission can be a success; however, when unapproved and nonbriefed training is conducted — it can lead to disaster.◀

can you HEAR me now?

CHIEF WARRANT OFFICER 4 DAVID MUEHLEISEN
U.S. Army Combat Readiness/Safety Center
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They're oversized, overweight and, ultimately, unforgiving. The fielding of Mine Resistant Ambush Protected (MRAP) vehicles provides Soldiers with greater protection against enemy threats than ever before. The hull design, armor enhancements and additional equipment in MRAP vehicles all offer extra defense on the battlefield. However, these advancements have come at a price for some vehicle crews who've had to cope with restricted outside visibility and altered vehicle handling. As the Army continues to field and improve its combat vehicles, the need for effective crew coordination is essential for Soldiers to safely and effectively complete their mission.

Vehicle crews are made up of Soldiers of varying skill levels. Training and understanding each member's role from the beginning makes all the difference in the outcome of combat operations. Two fatal MRAP accidents this year may have had different outcomes had the crews worked better together while navigating narrow roads near canals. The driver, vehicle commander and gunner needed to keep each other constantly informed on the vehicle's position on the road; however, they apparently did not understand this requirement.

Crew coordination defines each crewmember's basic duties and responsibilities in enhancing overall crew effectiveness. Some examples of these include:

- Communicating positively; ensuring the right message gets through.
- Directing assistance when vehicle crewmembers need it.
- Announcing actions, which ensures everyone is aware of what is happening.
- Offering assistance to a crewmember that is especially busy or needs help. This benefits the whole crew and is



something all should be prepared to do without being asked.

- Acknowledging actions to ensure those taking them know everyone is aware. A "Roger" callout may be all that is needed to maintain crew situational awareness.

- Using plain or standardized terms and avoiding slang to ensure everyone understands what you're saying. Ambiguous words or phrases like "I have it" or "Right" can have more than one meaning and bring about an incorrect response.

- Providing vehicle control and hazard advisories. All crewmembers should be prepared to assist the driver in avoiding road hazards, traffic, canal edges or other things they may not see due to the reduced visibility in up-armored Army Motor Vehicles and Army Combat Vehicles.

- Coordinating action sequences and timing so crew actions mesh. Sequencing actions and timing can be critical during weapons engagements, loading of ammunition, turret movements and while maneuvering the vehicle in combat.

Standardized words and phrases, such as those used in radio transmissions, help crews avoid confusion and allow them to react more quickly and efficiently. Using words known by everyone in the crew also prevents them from having to be

repeated. If the operators' manuals have a standard callout or term for a piece of equipment, get in the habit of using it, especially if a new crewmember joins the team. If someone doesn't understand what you have said, try saying it another way or in clearer terms instead of repeating it multiple times or raising your voice. Louder is not always clearer.

To ensure the whole crew maintains situational awareness, keep an open flow of information, especially in areas where the threat is elevated and the terrain is constricted. Conversations should be limited to mission-focused communications during critical times or events. The vehicle's intercom system should be used to enhance crew communications and checked before the mission to ensure it works. Be sure to clarify if what you said is not understood. Likewise, ask other crewmembers if you don't know what was said or is happening.

Crew coordination is more than open discussion while operating the equipment. Good, effective crews constantly work on improving their coordination and use after-action reviews (AARs) as a forum for future crew improvement. The entire crew acts as a team during mission planning, execution and AARs. These combat-proven techniques can help you better accomplish your missions and prevent accidents. <<

ARE YOU A SHARP SHOOTER?

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ARMY SAFE IS ARMY STRONG

I SHOULD'VE

As I begin this story, you'll have to understand I grew up in Hawaii. You know what that's like – warm, sunny weather every day. Our summer temperatures typically run in the mid-to-high 80s, with winter cold snaps plunging the mercury into the mid-to-low 80s. My only previous winter driving was a couple of winters at Fort Rucker in the “polar” regions of southern Alabama.

I was excited about my first aviation assignment out of flight school. I was assigned as company executive officer (XO) for a unit at Fort Campbell, Ky. I arrived there in late February, just in time for some heavy snows. My commander phoned me early one day before physical training (PT) to tell me the roads were “Condition Black” due to heavy snowfall. He told me we didn't have to report until 1 p.m. I thought, “Wow, I'm being told to stay home because there's too much snow on the roads – I like this Army job!” A few days later, we were informed the area was expecting freezing temperatures the next morning. We were told there would be no PT and to come in at 9 a.m.

As the company XO, the company commander was my

supervisor. We were the only commissioned officers and worked in the back half of the office along with the first sergeant. The orderly room clerks, a supply sergeant and Sgt. Morrison – an unforgettable mechanic who worked as the admin sergeant – occupied the front half of the room.

Recognizing I might not be up to snuff on winter driving, Sgt. Morrison approached me and asked if I was familiar with black ice. I told him no. He quickly explained what black ice was and, more importantly, recommended techniques on how to deal with it. Although this was more than 10 years ago, I clearly remember him saying, “Sir, the roads will look normal, but there will be a clear layer of ice (on them) that can kill you.”

He explained I needed to leave home a bit earlier, drive slower and allow more time and distance to brake. He particularly emphasized I needed to stick to the main roads and avoid back-road shortcuts.

Be WILLING to LISTEN to KNOWLEDGEABLE and UNDERSTANDING

Just as forecast, ice covered everything the next morning. I remembered Sgt. Morrison's advice, so I left home earlier than normal to avoid the rush-hour traffic along Highway 41A. Driving on ice was a new experience for me – one that reminded me of hydroplaning on a



LISTENED

COMPILED BY THE KNOWLEDGE STAFF
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wet road. I was glad I had a front-wheel-drive car with good tires and safely made it onto post. I figured all the traffic on the main roads had started to melt the ice on them.

I drove through main post along Chaffee Street and headed to Range Road – a back road shortcut to the airfield. I wasn't paying attention and approached the intersection of the two roads going too fast. I hit the brakes, lost traction and started to slide. Just then, I saw a truck approaching

I slid through the stop sign and steered to the right to avoid the ditch. My left tires had just slid off the pavement when I regained control of my car. Although the slide only lasted a few seconds, fear made it seem a lot longer as I contemplated landing in the ditch or smashing into the truck. I avoided both and eventually made it to work, shaken but unharmed.

Back then, I didn't know what composite risk management (CRM) was, so Sgt. Morrison did

he learned I wasn't familiar with winter driving and black ice, he took it upon himself to educate me. He identified the hazards and provided me with controls to mitigate the risks. I followed his advice – but only partially. I got complacent upon arriving on post and, against his warnings, took a back road. I'd failed to realize the back roads were icier than the main roads and didn't appropriately reduce my speed. Luckily, no one got hurt and my car and the truck escaped unscathed.

So what are the lessons learned? First, some things are more important than rank. Be willing to listen to anyone who is knowledgeable about the risks you are facing and understands how to use CRM to mitigate them. Second, once you have developed controls, follow through with all of them. Don't change your mind to choose a 70-percent solution. When it comes to safety, 70-percent solutions can easily become 100-percent disasters.◀

LISTEN to **ANYONE** who is
TALK about the **RISKS** you are facing
LEARN how to use **CRM** to mitigate them. ” ”

on my left. I knew I couldn't stop before I got to the stop sign. I figured I was going to either hit the truck or land in the ditch on the far side of the road, maybe even flip my car. Only then did I remember Sgt. Morrison's last tip, "Avoid the back roads!"

what all good noncommissioned officers do. Although he wasn't my supervisor, he took care of this junior officer. Some Soldiers think officers can – and should – always be able to take care of themselves. Thank goodness Sgt. Morrison didn't assume that. When

SNAP, CRACKLE AND POP!

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For many Soldiers, participating in sporting activities is the perfect way to spend their spare time. In addition to the physical benefits sports provide, they can also offer Soldiers an outlet for stress. Sometimes, though, going up for that rebound can take you out of the fight just as quickly as the enemy on the battlefield.

According to the injury prevention program at the U.S. Army Center for Health Promotion and Preventive Medicine, sports and physical training (PT) injuries were the second-leading causes (18 percent) of nonbattle injuries requiring Soldiers to be evacuated by air from Iraq for treatment

between 2003 and June 2006. Below are some of the most common sports and military fitness training injuries, plus some tips for injury-free exercises.

Runner's Knee

About one-fourth of all problems treated by orthopedic surgeons involve the knee,

according to the American Academy of Orthopedic Surgeons and the Department of Defense Military Injury Metrics Working Group White Paper. Torn ligaments and cartilage are the bulk of the problems, but runner's knee is a loose heading for many aches and pains involving the kneecap.





Runner's knee, which can strike cyclists, swimmers, basketball and volleyball players, step aerobics fans and runners, happens when the tendon below the kneecap becomes irritated from overuse or there is wear or arthritis under the kneecap. Women are especially vulnerable to ligament injuries and other knee disorders, with two to eight times the number of injuries found in male athletes. To help prevent knee injuries, follow the safety tips below:

- Replace worn-out shoes or insoles to help reduce impact. Switching from a hard to a soft running surface – or from a hilly to a flat route – may also relieve symptoms. Shoe inserts called orthotics, which lift your arches and help position your feet, may also help.
- To help hold your kneecap in line, strengthen your quadriceps (the front thigh muscles). Getting more rest and

cross-training can also help prevent overusing one set of muscles.

- In bad cases of runner's knee, take two days off and take anti-inflammatory medication, such as ibuprofen. After two days, be sure to warm up and cool down. Ice your knee for 20 minutes after the workout.

- Use weight machines to do leg extensions, concentrating on the last 30 degrees of the extension. Eight weeks of this exercise will keep runner's knee pretty much under control.

Ankle Sprain

What long-time basketball, volleyball, soccer or hockey player or runner hasn't twisted an ankle and torn a ligament or tendon? Ankle sprains account for one in five sports-related injuries, according to the American Orthopedic Foot and Ankle Society. Strengthening exercises, such as heel lifts on stairs, can help

prevent some sprains. Taping a weak ankle and wearing high-top boots and a lace-up ankle brace may also prevent injuries, but only some.

Treatment of ankle sprains involves RICE, an acronym for rest, ice, compression and elevation. Place your ankle upon a chair while you ice it for 20 minutes, three times a day. Then wrap it with an elastic bandage and keep it elevated. Make sure your skin doesn't freeze. It's a good idea to X-ray the ankle to rule out possible fractures and chipped bones.

Rest should only be for about a day. A helpful exercise is to sit in a chair and cross your legs so the injured ankle is off the floor. With the big toe on the injured foot, trace imaginary letters from A to Z.

Shin Splints

The shin bone is the attachment site for muscles used to help raise the arch



In an effort to combat Soldier injuries, the U.S. Army Combat Readiness/Safety Center is offering a new course through Combat Readiness University-II. The Injury Prevention through Leadership Course provides concise, accurate information, guidance and motivation Leaders need to prevent musculoskeletal injuries.

The course focuses on evidence-based strategies that have scientific backing, with strong emphasis on the Joint Services Physical Training Injury Prevention Work Group intervention recommendations. The goal of the course is to inform all Leaders of the severity of

the problem with injury prevention, outline the major risk factors that contribute to the problem and provide practical strategies that can be implemented to prevent unnecessary musculoskeletal injury.

This course is located on the Combat Readiness University-II Web site at <https://crlc.learn.army.mil>. Login with your Army Knowledge Online (AKO) login ID and password, select the courses tab, open the Joint Forces Safety Training Catalog and enroll in the course. Army Safe is Army Strong!



of the foot. Shin splint injuries are felt as pain on the inner side of the middle third of the shin bone and can be caused by running or jumping on hard surfaces, wearing worn-out shoes or increasing intensity too fast while training.

Shin splints often occur in people who aren't used to exercise. Wearing good shoes with solid arch support often solves the problem. Also, using the 10-percent rule (mentioned in the info box to the right) ensures you don't increase training too fast. Other ways to prevent and treat shin splints include cross-training, ice, orthotics, anti-inflammatory medication and strengthening and stretching of lower leg muscles.

Pulled Muscle

While you can tear any muscle tissue during exercise, the most common pulls are to the hamstring, calf (especially in aging tennis players) and groin muscles. Most are caused by weakness, fatigue,

inflexibility or a hasty and improper warm-up.

The hamstrings, the muscles in back of your thighs, go through a wide range of motion during running and are

muscle. Take time to warm up and cool down. Warm up means light activity until you break out in a slight sweat and then stretching. Don't worry if you're

Usually, the problem is the sudden overloading of muscles and ligaments that aren't warmed up or strong or flexible enough to withstand the activity. Back spasms,

THE "10-PERCENT" RULE

A tried-and-true rule in sports medicine may help you avoid doing too much too soon. The "10-percent" rule says to increase the frequency, duration and intensity of an activity by only 10 percent per week. So, if you start walking 10 miles the first week, you would walk no more than 11 miles the second week.

under great stress as they stretch out quickly in a long stride. When the hams pull, you may feel a painful pop and involuntarily grab the back of your thigh, which later can turn black and blue. You may also feel a gap in the muscle where the tear occurred.

RICE, anti-inflammatory medications and gentle stretches are the best ways to treat muscle pulls. As the injury is healing, start a preventive program of gentle stretching and strengthening the

not as flexible as your workout partner or teammates. The point of stretching is to help your muscles, not your ego.

Low Back Pain

The good news here is that low back pain is less prevalent among people who exercise regularly. It is a far more serious problem among overweight, sedentary people. Low back pain, however, is always lurking around the corner for golfers, tennis players, cyclists, joggers and baseball and softball players.

bulging discs and sciatica (pain shooting down the leg from the lower back) are less common but more painful.

Back pain treatment depends on the injury. A bulging disc and sciatica require immediate medical attention. Back spasms and muscle pulls respond to RICE, anti-inflammatory medication and a stretching and strengthening program. To keep low back pain at bay, learn about proper standing and sitting posture and lifting techniques. Scores of good exercises



increase back muscle strength and flexibility, as well as abdominal muscle strength. Abs support the back muscles; if the abs are weak, the back muscles become overstrained.



Shoulder Pain

Shoulder pain is common in sports that involve excessive overhead motion, such as swimming, tennis, weight training, volleyball, baseball and softball. Most shoulder problems are from overuse. The shoulder is a ball-and-socket joint held together by a group of muscles and tendons called the rotator cuff. Repeated use loosens the rotator cuff, and you feel stiffness, a lack of strength and slipping in the shoulder, especially as you raise your arm overhead. RICE and anti-inflammatory medication help shoulder

pain. But the best treatment is also the best prevention: exercises to strengthen shoulder muscles.

Tennis/Golf Elbow

When the tendons and muscles on the outside of your elbow are repeatedly overloaded in the backhand stroke in tennis, the result is tennis elbow. Golf elbow can occur on either elbow – on the outside of the leading elbow (the left arm for right-handers) or the inside of the trailing elbow (the right arm).

RICE and anti-inflammatory medication are routinely prescribed with these elbow ailments, but they don't heal the tissue. Forearm-strengthening exercises help in healing. Wrist curls (palm facing forward) and reverse wrist curls (palm facing backward) using light weights are great. Squeezing a soft rubber ball until arm fatigue sets in also builds strength.

Sports have always been a favorite pastime for Soldiers. Don't let a preventable injury keep you on the bench. Play safe and play smart.◀



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THE "FIGURE 4" STRETCH

The "figure 4" stretch is good for pulled muscles. Sit with one leg extended and the opposite foot tucked inside on your outstretched thigh. Lean forward and reach as far as possible without feeling pain. Hold for 20 seconds. Repeat with the opposite leg extended.



a sleepy time

Nightmare

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I thought I was invincible 30 years ago. I was working in Washington, D.C., in a great job on my third assignment as an enlisted Soldier. As a specialist (E4), I had a room in a large, comfortable barracks at Fort Myer, Va., and worked at a broadcast booth at the Navy Yard in Washington, D.C.



What was really sweet was that my girlfriend and I were soon to be married. I'd found an apartment I could afford in Fairfax, Va. The only thing I had to do was drive to Alexandria, Ala., and get to the church on time.

My noncommissioned officer in charge (NCOIC) saw to it my work was caught up and I was set for two weeks leave. When Tuesday afternoon rolled around, he told me I could leave, but warned me to be safe.

I went to bed early, knowing I'd need to be rested to make the

drive from Fort Myer to Alexandria. I woke up at 11 p.m., feeling great after a few hours of sleep. I decided to shower and finish packing the car. If I left right after midnight, I could get a six-hour jump on the trip and

arrive at my fiancée's home about noon instead of during the evening.

I pulled out a little after midnight, driving my new Ford Granada, a car the company marketed as being just as good as a Mercedes! The

» GOT TRIPS?

Want some help dodging the pitfalls that almost did in the author of this story? Use your Army Knowledge Online (AKO) username and password to login to TRiPS from the USACRC Web site at <https://crc.army.mil>. As you go through the TRiPS program, you'll see questions designed to help you develop effective strategies to mitigate the risks posed by fatigue.

weather was clear, the traffic was light and there wasn't a state trooper in sight. This was going to be an easy trip.

I had promised my NCOIC and my fiancée I'd be careful on this trip. But, to me, "careful" meant wearing my seat belt, doing the speed limit and not driving under the influence. I was used to driving long distances and had covered the 650 miles from Fort Myer to Alexandria in the past without problems. But this trip would be different.

After nearly six hours on the road, I was exhausted. My nap the previous evening hadn't been enough to carry me all the way through the trip. I surfed the radio without finding much of anything I liked, so I decided to stop when I found a place. In the meantime, I rolled down the windows and shifted and stretched in my seat. I made up songs and sang them – badly. If only I could make it just a little while longer.

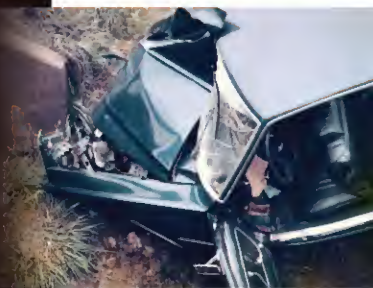
But the sandman had other plans.

It was about 6 a.m. and there was a light drizzle on the road. I was driving near Lexington, N.C., crossing a small bridge over Abbotts Creek when exhaustion overcame excitement and I fell asleep at the wheel. I don't remember the "crash" – only waking up afterward and wondering what had happened. As it turned out, I'd driven over a short concrete bridge siding and landed with my car nose-down in a dry creek bed. The car was at such a steep angle the door fell open when I pushed it and I jumped to the ground.

Fortunately, thanks to the light traffic, I hadn't hit anyone else. As I waited, other drivers stopped to help me until the state trooper arrived. I didn't know it then, but I had three deep cuts on my face. When the state trooper arrived, he radioed for an ambulance and a wrecker. I went to a hospital in Winston-Salem, N.C., while what was left of my car went to a junkyard at a gas station. The doctors stitched up my face and looked for signs of broken bones or other trauma. I appeared to be OK and was released.

However, now I was stuck without a car and with very little cash. I tried to contact my NCOIC and left him a voice message. I said I'd been in an accident, but wasn't badly injured and intended to continue my trip. I decided not to call my fiancée – I didn't want to worry her.

I got a lift to the Winston-Salem airport, where I used my credit card to rent a car. I then recovered my personal items from the



IS THE SANDMAN AFTER

Getting a little droopy on the eyelids? How about the ever-popular head snaps? Having trouble focusing your eyes on the road and your mind on the drive? Wondering why things look unfamiliar around you because you can't quite remember the last few miles? It could mean the "Sandman" is about to pay you a visit. To keep him from putting your lights out – maybe for

good – consider the following tips from the National Safety Council:

- Maintain a regular sleep schedule that allows adequate rest.
- When the signs of fatigue begin to show, get off the road. Take a short nap in a well-lit area. Do not simply stop on the side of the road.
- Avoid driving between midnight and 6 a.m.

wrecked Granada and got on the road again. Although I was tired, I was determined to get to the church on time – even if it killed me.

When I got to Atlanta, I was hungry, thirsty and needed to fill the gas tank. While at a gas station, the gas cap fell off the bumper and rolled under the car. I was too sore to bend over and reach under the car to get it, so I asked the attendant if he could come out and get it for me. Although he didn't want to leave his bullet-proof cocoon, he did. It was only after I was back on the highway that I realized I could have rolled the car a few inches forward and picked up the cap myself. Fatigue tends to dull one's thinking.

I eventually arrived safely at my in-laws' home. As it turned out, my NCOIC had gotten my message and called my fiancée, concerned how I was. She'd been a nervous wreck all day, wondering what kind of condition I was in. After describing my day-

long adventure and receiving my first tongue lashing from the in-laws, I collapsed on a bed and fell fast asleep.

That accident nearly cost me my life. The outcome would have been very different if I'd hit the bridge siding a little further to the left on my front bumper. As it was, I cost the Army an ambulance ride, a couple of hours in the emergency room and medical treatment that included 32 stitches.

We celebrated our 30th anniversary this year. We still take long trips, but I do a much better job of planning for them. Nowadays, I use information provided by the U.S. Army Combat Readiness/Safety Center (USACRC) – particularly the Travel Risk Planning System (TRIPS) – and other sources to plan for proper rest before and during our travels. Back when I thought I was invincible, I thought fatigue was the one risk factor I could beat. I was wrong. I almost let it turn my trip to be with the girl of my dreams into a nightmare.◀

R YOU?

When Planning Long Trips:

- Share driving responsibilities with a companion.
- Begin the trip early in the day.
- Keep the temperature cool in the car.
- Stop every 100 miles or two hours to get out of the car and walk around; exercise helps to combat fatigue.
- Stop for light meals and snacks.
- Drive with your head up, shoulders back and legs flexed at about a 45-degree angle.

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The Capstone Event

1ST LT. ETHAN MILLER AND WARRANT OFFICER 1 ROSS WISE
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The following observations on aviation mission planning and composite risk management (CRM) are from some of our newest Army aviators during their helicopter flight training at Fort Rucker, Ala. From this, one can easily conclude that a marriage of operational training and mission execution is embedded with safety and risk management.



Since its inception, Army aviation has played a major role in winning our nation's wars. Refined airframe technology and highly trained operators are combined to offer the perfect air asset for today's ground tactical commanders. Often, these missions involve multiship tactical transport of troops, supplies and equipment. These missions require extensive pre-mission planning, a high level of involvement among its respective

pilots, contingency considerations and thorough risk mitigation.

To prepare for real-world situations, today's Army Initial Entry Rotary-Wing flight students experience battle-focused training. This progressive training consists of detailed instruction, allowing flight students to crawl-walk-run through varying levels of complexity with the goal of graduating aviators competent in the basics of their airframes.



The safe and controlled environment of the Black Hawk Flight School XXI (FS XXI) course presents the perfect opportunity for flight students to capitalize on a capstone event called Operation Wooden Horse. This is a joint training mission between UH-60 Black Hawk student pilots at Fort Rucker and the 6th Ranger Training Battalion (RTB) at Fort Benning, Ga.

The Mission

This multiphase air-assault mission included a cross-country flight of 12 aircraft, tactically transporting 180 Ranger students

from Pickup Zone (PZ) Eco to the designated objective area Python at Eglin Air Force Base, Fla. The notional mission objective was to restrict the ability of the Burmino Independence Front (BIF) from conducting future coordinated attacks against the Argon government.

Pre-mission planning required staying long nights in Fort Rucker's Learning Center briefing room hashing out the details. All of our flight school knowledge and training were challenged and tested to the limit. We had to develop a plan

for a cross-country flight to put 12 aircraft into the air from Lowe Army Heliport; refuel at the forward arming and refuel point (FARP) at Florala Municipal Airport; proceed to the PZ to transport 180 Ranger students to Eglin Air Force Base's auxiliary field No. 6 (Objective Python); and then recover to Lowe Army Heliport in accordance with federal and military aviation regulations.

Each mission segment was planned beforehand so that, on

the day of execution, all parts and pieces would flow together in one seamless rendering for mission success. As we all know, a plan is an idea to base changes on. Therefore, we planned resilience into each phase and thoroughly rehearsed them to provide room for changes contingent upon the whims of Murphy's Law – "Everything that can go wrong, will."

Successful mission completion by meeting the objective while mitigating the identified risks was our desired end-state. The following are a few of the questions we prepared for during pre-mission planning:

- What timeline was needed to successfully air assault the Ranger students into the landing zone (LZ)?
- For 12 aircraft flying approximately 100 feet apart in a staggered-right formation, what route should we use to fly from point A to point B, flying tactically, but safely clearing known obstacles and avoiding extreme heading changes?
- Would we have enough fuel?
- What if we had an en route emergency causing one or more of our aircraft to make a precautionary landing?
- How would we account for the overall drop in Ranger carrying capacity if a precautionary landing occurred?
- How much food would we need for 180 Ranger students?
- If we inadvertently punched into the clouds, how would the formation of aircraft react?
- How do we communicate with the Ranger students on the ground?
- Once we delivered all Rangers to their respective LZ, would we have sufficient fuel to return to Lowe Army Heliport?
- What is the refueling capacity at FARP Florida, and can it be accomplished with the prescribed 12 aircraft at one time, or should we divide our group into two or more serials?

After-Action Review (AAR) Notes from Student Flight Lead

I did not realize the full responsibility of being flight lead until our planning cell received the mission and we began analyzing it. Until then, I imagined the instructor pilots (IPs) would walk us through the briefing, explaining most components in depth and ensuring every detail was covered. Wrong! Nothing was further from reality. From the beginning, it was clear that we would organize ourselves, analyze the mission and prepare and conduct the entire briefing and rehearsal to our peers, their IPs and the company commander. The IPs prescreened our product. If we forgot any of the mission details or if we briefed incorrectly, they addressed these concerns during the question-and-answer session.

Our training courses, up to this point, had given us the tools we required. We were proficient in using the Aviation Mission Planning System (AMPS) to plot and calculate flight routes and training that included multiship formation flights. We used CRM in all aspects of the mission planning as part of every training flight.

The preparation for the briefing with our planning cell was an eye-opening experience. We had to consider the fictitious threat from the opposing forces in our scenario; what their capabilities were, what weapons and tactics they were likely to employ and how that might affect our mission. We had to consider the ground commander's vision and how his intent dictated our method for accomplishing the mission. We also had to consider emergency procedures as a flight of multiple helicopters and what actions we would take to recover safely if incidents occurred. Observing my peers as we conducted the briefing, I perceived a sense of astonishment, as if they were thinking, "Wow, I'm

going to be required to do that soon at my unit!" Watching the role of the air mission commander (AMC) and company commander in bringing up possible contingencies and deciding on appropriate solutions was also a valuable experience.

The most valuable lesson learned from the Ranger mission was how to apply CRM properly. For everyone involved, the mission was a vivid illustration of CRM as "a holistic assessment, blending tactical and threat-based risk management with accidental, hazards-based risk management." (TC 1-210, *Aircrew Training Program Commander's Guide to Individual and Crew Standardization*, Chapter 6, Page 6-1)

AAR Notes from Student Air Mission Commander

Evident throughout the entire pre-mission planning, execution and debrief of Operation Wooden Horse, one critical task for all operations was minimizing risk. This was a high priority for our flight students. The planning process allowed us the vital experience of being "confronted with risk management decisions while conducting [battle-focused] training." We now understand how these methods of determining,



acknowledging and mitigating risks will allow us to tailor future rehearsals and mission briefings to reflect the requirements and objectives of the mission, with special emphasis in these risk areas.

During our collective class rehearsal, conducted with a detailed "play-by-play" format, the goal was to present a hands-on visual to better inform the individuals participating in the mission. The intent was to isolate and highlight the risks associated with each portion, so as to bring these important considerations to the forefront of each student's mind as they saw the mission in the big picture.


Before leaving the rehearsal, the unit commander made it clear we would not continue the training mission if an unrehearsed contingency arose that would put us at risk with no added benefit and outweigh the quality of the training we would receive. End result? Each student headed out intellectually prepared for a realistic, complex training event, confident in risk mitigation and ecstatic for the chance to participate in an event that would likely appear in some form at their respective

units. Furthermore, all student pilots were equipped with a toolkit consisting of AMPS expertise, CRM implementation, thorough kneeboard packets, detailed air mission briefs and multiship collective training – all of which were never possible before FS XXI.

During the execution of Operation Wooden Horse, our IPs and the commander continuously monitored our performance. The mission was tough and realistic, but reflected all the standards we had been taught. Operation Wooden Horse served as the perfect capstone to our FS XXI training. It was satisfying to note that the contingencies that did arise were easily dealt with due to the time and attention we'd devoted to ranking hazards based on their level of assessed risk and actively mitigating hazards during the

planning and rehearsal process.

During our review of Operation Wooden Horse, it was hard to contain the excitement and feelings of accomplishment. But, even then, we pointed out more areas that could be improved on future Ranger missions. What was our goal? Had we accomplished it? Had we learned and become more competent in our craft? The answer is a resounding "yes!" Training like this capstone event is invaluable and much more than just helicopters and Ranger students. Our commander and IPs offered us the tools and expertise to increase the realism of combat training without increasing the risk. The result is a lower overall risk for FS XXI UH-60 aviators who enter their units better trained, more experienced and ready to lead by example and to set the standard for those in our field. ◀



“The **MISSION** was **TOUGH** and **REALISTIC**, but **REFLECTED** all the **STANDARDS** we had been **TAUGHT.**”

WATCH

Every year, thousands of Americans are injured or killed in slip, trip and fall accidents. Many of these losses can be prevented with a little consideration of the types of hazards we face at work and home.

Slips, trips and falls are one of the major types of personnel injury accidents for both Soldiers and the civilian workforce. According to the National Center for Injury Prevention and Control, Centers for Disease Control and Consumer Product Safety Commission, falls are the leading cause of nonfatal unintentional injuries treated in hospital emergency rooms. Furthermore, the Occupational Safety and Health Administration (OSHA) reports slips, trips and falls account for 15 percent of all accidental deaths nationally and are second only to motor vehicle accidents as a cause of work-related fatalities. Poor housekeeping, inadequate maintenance, improper procedures and inattention all contribute to slips, trips and falls. Some Army examples of these types of accidents include:

- A Soldier suffered fatal injuries when he fell 8 to 10 feet from a front-end loader. The Soldier was attempting to climb from the loader onto a roof to provide realistic training.
- A civilian office worker slipped on a tile floor and fell. She injured her knee, requiring medical treatment, and lost one workday. A cleaning crew had just waxed the hallway floor and failed to post warning signs.
- A Soldier was standing in a chair with casters while taking down office decorations. The chair was a quick shortcut instead of going to supply for a step ladder. The Soldier fell and broke his wrist when the chair rolled from underneath him. The injury required surgery and physical therapy, and the

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YOUR STEP

Soldier was on restricted duty for several months to recover.

- A facility maintenance worker was climbing a wooden stepladder when a cracked rung broke under his weight. The worker fell, injuring his back and leg. He failed to inspect the ladder before using it.

- A Soldier was wearing shower shoes while walking down a flight of stairs. In a hurry, he slipped and fell, resulting in a broken arm and leg.

Do these accidents sound familiar? They should – injuries from slips, trips and falls are common. Listed below are some of the most frequent causes of these types of accidents.

Inattention. Distractions such as reading while walking or not paying attention to the walking or working surface can lead to a fall. Many fall victims fail to look for hazards directly in the path of travel, and most of these accidents can be avoided by paying attention. Adequate lighting should also be provided around doors and walkways to parking areas so hazards are more visible.

Slippery and uneven work surfaces. Slippery floors are often a result of inadequate housekeeping. Wax, water, spilled coffee, leaking oil from equipment or ice outside a building entrance can set the stage for a fall. Loose stair treads, broken floor tiles and other uneven work surfaces can trip the unwary. To help prevent some of these accidents, develop an ice removal plan before the start of winter and provide warning signs for wet floors. OSHA standards

require that walking or working surfaces be maintained and kept in a clean and, to the greatest extent possible, dry condition to prevent tripping hazards. Aisles and passageways also must be kept clear and in good repair.

Proper footwear. Proper footwear can greatly reduce the

or more above the adjacent floor or ground be protected by standard guard railings. Use covers or guard rails to protect maintenance pits and other floor holes when not in use to prevent personnel from falling into them. Also, any work above 6 feet may require the use of fall-protection equipment.



Beginning January, *Knowledge* will have a section dedicated to workplace safety. Called "At Work," the goal of the section is to keep readers informed about various hazards in the workplace and what they can do to mitigate and/or eliminate those hazards.

potential for slips and falls. Traction is all about the contact between the walking surface and the sole of the boot or shoe. The slickness of soles and the types of heels need to be evaluated based on the work environment, tasks performed and walking surfaces. Choose footwear based on function, not fashion. In addition, investigate any accidents involving slips and falls to determine if the type of footwear contributed to the accident.

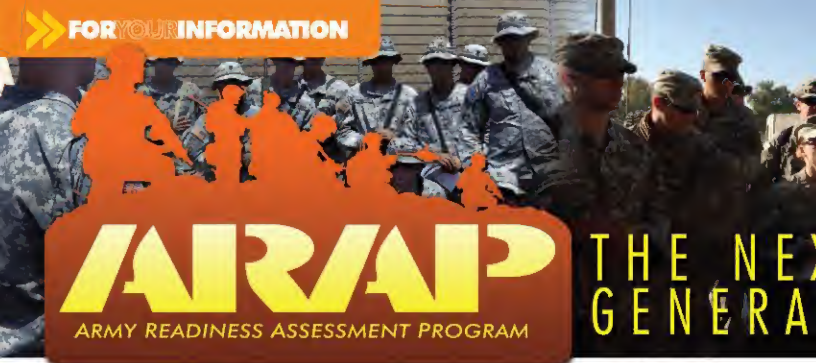
Tripping hazards. Most tripping hazards are related to housekeeping standards. Electrical cords across office aisles, water hoses across sidewalks and boxes of supplies in hallways are all tripping hazards that must be fixed immediately. Remember, it is easy to become complacent about tripping hazards you see every day.

Falls from elevations. To prevent falls from elevations, OSHA general industry standards require platforms and work surfaces 4 feet

Ladders. Chairs, furniture and milk crates are not substitutes for a ladder. Make sure the ladder is the correct length for the task. A ladder should extend 3 feet above the roof so you have handholds for getting on and off the ladder. Use a stepladder correctly and don't stand above the recommended safety limit. Portable ladders must be inspected, maintained and used properly to avoid serious injury from falls. Tag and remove damaged or unserviceable ladders from the work area to prevent their continued use. Failing to secure the ladder or extending beyond safe reach limits are common unsafe behaviors leading to accidents.

Injuries and deaths from slip, trip and fall accidents are preventable. By taking the time to identify the accident hazards in your work area, you can help ensure your next step isn't your last. <<





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U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

Engaged Leaders are making a difference at every level. Now, with improvements to the Army Readiness Assessment Program (ARAP), Leaders have an even more powerful tool to measure the safety culture and climate inside an organization.

During the last two years, more than 2,000 battalion-level units and about 448,000 Soldiers and Army civilians have participated in ARAP and received immediate feedback from the ARAP team analyzing the results of collected unit responses. In March, the U.S. Army Combat Readiness/Safety Center (USACRC) released an updated version of ARAP to provide users increased navigation capability. In addition, new functions have been added to allow units in the field to register to participate in ARAP and also allow them to see a demonstration of the program.

Along with these upgraded features, ARAP (Next Gen) now provides brigade-level and above commanders with useful information through the use of a confidential higher-command access code. This

new capability will assist in managing unit participation, but, more importantly, it will provide 24/7 access to charts and graphs that reflect the safety climate and culture across an organization.

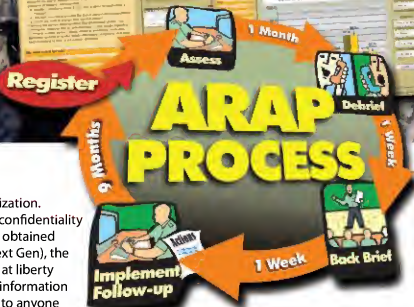
Within ARAP (Next Gen), commanders have the capability of reviewing aggregate data for their commands. This access will not compromise the confidentiality and anonymity provided to battalion-level commanders and Soldiers that complete the ARAP process. Additionally, they are able to determine when and which of their battalions are registered and have received a confidential debrief from the USACRC. Battalion commanders routinely will brief their higher chain of command on key results, their intended courses of action and where they

need assistance. Battalion commanders then execute their plan and – 12 to 13 months later, about mid-tour – check unit progress by comparing the results of the first and second assessments.

By using access codes, higher commands are able to break down survey responses, targeting specific calendar or fiscal years, while keeping those responses anonymous. This capability is available to commanders at brigade level and above, commensurate with their level of command, to monitor progress within their organization and determine areas of both success and concern. Senior-level commanders can also



XT TION



receive a personal debrief and program navigation assistance by contacting a member of the ARAP team.

The information provided with this capability only identifies battalions having participated in ARAP and supplies an aggregate view of the command. As new units continue to enroll, they will automatically be added to their higher command's aggregate data. So, once again, you will always be receiving the latest data

for your organization.

Due to the confidentiality of information obtained from ARAP (Next Gen), the USACRC is not at liberty to release this information (access codes) to anyone other than the commander without being provided written permission (including e-mail). Acceptable command authority can be from any of the following members of the command group with the appropriate phone number(s): commander,

deputy commander, chief of staff or executive officer. In an effort to maintain confidentiality, access codes will not be released to anyone telephonically.

Commanders or their designated representatives

may request their access code for brigade or equivalent levels and higher by contacting ARAP team members at (334) 255-9362/9577/9394/2781, DSN 558-XXXX or by e-mail at arap@conus.army.mil.<

ARAP STATISTICS

September 2006-September 2008

Total number of units and personnel enrolled in ARAP

1,924 AD
201 NG
614 USAR
2,739 Units
837,647 Personnel

Total number of units and personnel complete/debriefed

2,054 Units
448,350 Personnel Debriefed

ARAP Quartile	(Mean Score) Range	Class A Accidents
1 st	(4.02) 3.86 - 4.74	52
2 nd	(3.78) 3.71 - 3.86	71
3 rd	(3.64) 3.57 - 3.71	93
4 th	(3.43) 2.68 - 3.57	101



I Made it Home - Saved by my PPE

I was riding home through Spring Lake, N.C., on my motorcycle after work one day. Once I got through the heavier stop-and-go traffic, I started looking for a place to pull off the road and make a phone call. I spotted a good location and turned on my right turn signal. I checked my mirror and noticed a large sport utility vehicle (SUV) approaching from about 100 to 130 feet behind me.

Although I was in the right lane and signaling, before I could turn, the SUV rear-ended me doing about 45 mph. The impact drove me and the bike some 40 feet across the driveway and against the curb. As the bike slammed into the curb, I flew over the handlebars and landed on my right side in the road. The bike was still running, even though the impact had completely torn off the swing arm assembly and rear tire.

A lady who witnessed the crash was sure I was dead and made her son stay in her car as she ran over to me. It surprised her when

I started trying to crawl out of the road. She told me the SUV driver was looking down just before the impact and never slowed before hitting me. (It turned out the driver, a young second lieutenant, was searching for something he'd dropped on the floorboard.)

It's simply amazing the things that go through your mind after a bad crash. I asked the lady to please turn my bike off because I didn't want to waste gas. Thankfully, someone else who'd come to help me had already done that after seeing the headlight was still on. I asked

them to remove the key and give it to me so the battery wouldn't go dead and no one could steal the bike. I then asked for someone to take pictures since this was going to be one heck of a "There I was" story and a good picture is worth a thousand words.

After I had the unimportant things taken care of, I called my wife to let her know I was going to be a little late getting home. I asked her to bring me supper and said I would meet her at the hospital. Shortly afterward, Spring Lake emergency services pulled up. They immediately immobilized



SGT. MAJ. CORDELL ACKLEY
3rd Special Forces Group (Airborne)
Fort Bragg, N.C.

my spine and strapped me onto a stretcher and transported me to Fort Bragg's Womack Army Medical Center. There, I was treated for lower back pain, scrapes on my chest and midsection and bruises on my right side and both legs. Fortunately, I didn't have any broken bones and was not too much worse for wear. I was released for duty later that evening.

I have seen many riders going for the "cool" look, riding shirtless while wearing a novelty helmet rather than good personal protective equipment (PPE) and a Department of Transportation (DOT)-approved helmet. You have to wonder what – or if – they're thinking.

I am lucky to be alive today. The only reason I am here writing this article is because of my PPE.◀

HELMET STYLES MATTER

JACK GRIFFIN
Fort Hood, Texas

Editor's note: This e-mail came just in time to be included in our November magazine and provides insight into why all personal protective equipment choices – particularly helmets – are not equal. Did you know Knowledge is also your forum to discuss aviation, ground and off-duty safety? If you have something to share or want to respond to an article you've read in this magazine, visit https://crc.army.mil/knowledge/tell_story.html.

I have been a motorcyclist for more than 30 years and a paramedic for over 22 years. As a paramedic, I have too often seen the tragic consequences of motorcycle accidents. These accidents leave some riders dead and others with terrible head injuries. The most significant protection for the rider is the helmet.

I work as a Department of Defense paramedic on Fort Hood, Texas, and have seen too many Soldiers killed or seriously injured on motorcycles. Unfortunately, these incidents are, in my opinion, largely due to the increasing popularity of motorcycles. In my experiences with the injuries being suffered, there is a common problem. That problem is inadequate head protection due to poorly designed helmets. The No. 1 helmet problem is the half helmet or "half shell" helmet. This helmet is poorly suited to protect a rider in the event of an accident. In some cases, the half shell even comes off during impact, allowing for more injuries or deaths to occur. I have personally seen this type of situation. An article in Wikipedia noted, "Half helmets are also prone

to shifting and sometimes coming off of the rider's head during an accident." This helmet is currently allowed for service members to use.

If someone wants to make significant reductions in deaths or severe head injuries to our Soldiers, a simple way would be to stop the use of these "widow makers" and require three-quarter or full-face helmets. With new technologies, full-face helmets are lighter, cooler, more ventilated and are proving to be life saving. They give some cervical spine, facial and chin protection to the rider. Wikipedia also noted, "Studies have shown that full-face helmets offer the most protection to motorcycle riders because 35 percent of all crashes showed major impact on the chin-bar area."¹ In closing, I hope you can see I am trying to do the best for our Soldiers, their families and the military. I pray you will join me in the fight to save lives and provide the best we can offer.◀

¹ Dietmar Otte, Hannover Medical University, Dept. of Medical Research, Germany.

CHIEF WARRANT OFFICER 4 DANIEL CROSS
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IT COULD HAPPEN TO

Like most Soldiers, I've read the articles and seen the posters that say, "Seat Belts Save Lives." But I never really thought I would be involved in an accident. That all changed in May 2003 when I was in a life-threatening, two-vehicle collision in Kuwait. I now know firsthand the value of wearing a seat belt.

I was stationed at Camp Udari, Kuwait. Though most of our battalion had moved forward and was in Baghdad, our company remained at Udari with two important missions: provide aviation intermediate maintenance support and find, requisition and push forward desperately needed parts.

One morning, I was riding in a nontactical vehicle with a contractor. We were heading from Camp Udari to Camp Doha, and I was riding in the front passenger seat. One of the noncommissioned

officers (NCOs) from my company was also riding with us because he was going on emergency leave and needed to get to Camp Doha. He was sitting in the backseat, behind the driver. Fortunately, all three of us were wearing our seat belts.

The roads from Udari to Doha were dangerous and highly traveled. In fact, we had traveled this route many times and were familiar with it. As we entered Kuwait City, the road became a four-lane divided highway. About three to five miles from the front gate to Camp

OPEN YOU

intersection. The light turned green and the contractor began to accelerate as we started to pass the buses in the left lane. Little did we know, because the buses were blocking our vision of the intersection, a civilian tractor-trailer in the oncoming lane had run a red light and was making a left turn in front of us. As we entered the intersection, we saw the vehicle but had no time to react. We struck the side of the tractor-trailer at the rear dual tires. I would estimate we were

backseat. He had bitten his tongue on impact and had the wind knocked out of him. The impact was hard enough that the body of the vehicle had buckled and the doors on the left side would not open. The NCO was able to slide across the seat and exit the vehicle from the right side.

After getting him clear of the vehicle, I went back to help the driver. By this time, there were Soldiers coming from the buses that were next to us at the intersection. They were able to help carry the contractor away from the burning vehicle. Within a few minutes, the vehicle was engulfed in flames. The only things we were able to save were the items we were wearing. Shortly thereafter, an Army ambulance arrived at the scene to take us to the hospital. The contractor was admitted with a broken ankle, while the NCO and I were released after being examined.

After this accident, two things became very clear to me. First, seat belts saved our lives and, second, defensive driving could have prevented this crash. As we approached the intersection in the right lane, we could not see because the buses to our left blocked our view. In our case, we had the green light. Unfortunately, there is always someone who thinks he or she can beat the light. That may have been the attitude of the tractor-trailer driver. If we had driven more defensively, we would have slowed down so we could see past the buses before entering the intersection. We may have been able to stop and avoid the accident.

The one thing we did do right that day was buckle up. Remember to always wear your seat belt whenever you're in a vehicle. You never know when it's going to save your life.◀

“UNFORTUNATELY, there is ALWAYS SOMEONE who THINKS HE or SHE can BEAT the LIGHT.”

Doha, we approached a three-way intersection. The highway we were on went straight through the intersection. Another four-lane road came into the intersection from the right. There was a stop light at the intersection, and as we approached it, the light was red. There were several commercial buses filled with Soldiers in the left lane stopped at the light and no traffic in the right lane.

The contractor driving our vehicle merged into the right lane and began to slow down as we approached the

traveling about 40 mph at the time of impact and hit extremely hard. I don't remember the air bags deploying, but they did. I do remember moving the air bag out of the way and noticing the vehicle was now on fire. Apparently, the impact had broken the fuel line and something had ignited it.

The contractor had injured his ankle but, otherwise, said he felt OK. My body was hurting from the seat belt, but, as far as I could tell, I was fine. I jumped out to help the NCO in the



LOST

AVIATION

OH-58



CLASS A

D(R) Model

■ The aircrew experienced brownout conditions during landing, resulting in the aircraft impacting the ground. The aircraft was destroyed.

CLASS C

■ The aircraft's main rotor blade made contact with the tail boom during completion of a low-level autorotation maneuver.

■ The aircraft engine power turbine spiked to 124 percent for five seconds during manual throttle operations.

TH-67



CLASS C

A Model

■ The aircraft experienced a turbine outlet temperature (TOT) spike of 927 C during student changeout.

■ Preflight inspection of the aircraft revealed spike knock damage associated with prior flight.

UH-60



CLASS D

L Model

■ While on approach to the airfield, the aircraft hit a bird. The aircraft was approximately 150 feet above ground level (AGL) when a small flock of birds flew up out of the trees on the south end of the runway. The pilot in command (PIC) attempted to maneuver away from the birds, but was unsuccessful. The aircraft landed and ground taxied to parking, where it was shut down for a visual inspection.

DO YOU BRIEF "GO-AROUNDS" DURING PRE-MISSION BRIEFS? THERE'S NOTHING WRONG WITH EXECUTING A GO-AROUND!

RC-12**CLASS D****K Model**

■ During taxi, the crew smelled a burning odor in the cockpit. No fire light had illuminated; however, the crew shut down the aircraft and egressed. Smoke was coming from the No. 2 engine cowlings. The PC entered the aircraft and discharged the engine fire extinguisher. He then opened the cowlings and discharged a portable halon fire extinguisher directly into the engine compartment. The air conditioner condenser motor seized, catching the drive belt and pulley on fire. The crew extinguished the fire before the fire department arrived. The aircraft was towed back to the hangar and maintenance replaced the air conditioner condenser motor, drive belt and small engine cowlings.

UAS**MQ-1C****CLASS A**

■ The UAS aerial vehicle operator (AVO) initiated a rapid descent, during which time the nose of the UAS pitched down. The UAS went into an uncontrolled spiral to the ground and was destroyed upon impact. The system and payload were recovered.

MQ-5A**CLASS A**

■ The UAS experienced an aft engine failure at 8,000 feet AGL and lost altitude. The recovery chute deployed; however, the UAS crashed.

RQ-1L**CLASS A**

■ The UAS experienced a hard landing with damage to the right landing gear and payload. The system was recovered.

RQ-7B**CLASS B**

■ The UAS drifted off the runway following touchdown.

■ The UAS experienced engine RPM fluctuations and subsequent decline. The recovery chute deployed; however, the system was damaged upon recovery.

GROUND**ACV****CLASS A**

■ An Armored Security Vehicle carrying ammunition sustained major damage when a fire started onboard.

AMV**CLASS A**

■ A Soldier was killed in an M1075 Palletized Loading System (PLS) rollover. The Soldier was driving the PLS on a mountain road when the vehicle left the road during a turn and rolled over. Another Soldier received non-life-threatening injuries. Both Soldiers were wearing helmets and required personal protective equipment (PPE).



**HOW FAST IS TOO FAST?
DO YOUR SOLDIERS
UNDERSTAND THE
CONSEQUENCES?**

ARMY AIRCRAFT LOSSES

Fiscal 2002 to Present
through September 30, 2008



AH-64A/D	11/51
U/MH-60A/L	9/31
C/MH-47	8/19
OH-58D	11/28

TOTAL 39/129

ARMY GROUND LOSSES

Fiscal 2008
through September 30, 2008



AMV	22/19
ACV	8/7
PERSONNEL INJURY <small>includes weapon-handling accidents</small>	47/40
FIRE/EXPLOSION	4/4
PROPERTY DAMAGE	5/0

TOTAL 86/70

■ A Soldier was fatally injured when he was thrown from the cupola of an M1114 during a convoy movement. The vehicle collided with an Iraqi Army HMMWV at a four-way intersection.

Personnel Injury

CLASS A

■ A Soldier suffered fatal injuries during a recreational parachute accident. The Soldier collided with a civilian parachutist about 50 feet above the ground. The civilian died at the scene. The Soldier died the following day at a local medical center.

■ A Soldier suffered permanent paralysis when he was struck in the neck by a round from an M9 weapon. The Soldier was helping another Soldier clear/load the weapon in the barracks when a round discharged.

DRIVING

POV



CLASS A

■ A Soldier was killed when his van struck a tractor-trailer that failed to yield right of way at a crossover.

■ A Soldier fell out the passenger-side door of a pickup truck, struck his head and died from the resulting injuries. The Soldier was on midtour leave from Operation Iraqi Freedom.

■ A Soldier was traveling with his wife and two children when they were rear-ended by a tailgating driver. The collision pushed the Soldier's vehicle into a tractor-trailer and then into the path of a sanitation truck. The Soldier, his wife and children were all fatally injured.

■ A Soldier was driving his van when he rear-ended a cement truck that had slowed for traffic. The Soldier was taken to a local medical center, where he died.

DO YOUR SOLDIERS UNDERSTAND THEY NEED TO LOOK AS FAR AHEAD AS POSSIBLE ON THE ROAD TO SPOT POTENTIAL HAZARDS?

■ A Soldier was driving his sport utility vehicle to physical training formation when the vehicle crossed the road, entered a culvert and overturned. The Soldier was trapped inside and suffered fatal injuries. Seat belt use was not reported.



POV DRIVING LOSSES

through September 30, 2008 Class A accidents/Soldiers killed

CARS	46/46
SUV/JEeps	10/12
TRUCKS	13/10
MOTORCYCLES	52/50
OTHER*	8/8

*Includes vans and ATVs

126
TOTAL DEATHS
Fiscal 2007: 110 3 year average: 125

WHEN A "C" IS NOT A PASSING GRADE!

BOB VAN ELSBERG
U.S. Army Combat Readiness/Safety Center
Fort Rucker, Ala.

In the world of accident reporting, Class A fatalities get the lion's share of the attention. But that doesn't mean there aren't lessons to be learned from the Class Cs.

Ever get so excited about a new toy that you start playing with it before you read the instructions? Imagine the toy being a new Honda Shadow 750 motorcycle. Imagine a "newbie" rider opting for the "I don't need no-stinking-training" attitude before playing with one.

As our Soldier was soon to discover, the "learn-as-

you-go" approach does have its pitfalls. While the levers for the front brake and clutch are on opposite sides of the handlebars, they do bear a remarkable resemblance. And there is where our Soldier got into trouble. While practicing stopping, he got his levers confused. To quote the report, "The Soldier does not remember if he pulled the clutch in and shifted into second gear or tried to apply the brake."

If the Soldier is a bit foggy on his recollections, history accurately records what followed. Rather than braking, the Honda

— with its confused rider onboard — accelerated and nailed a 6-foot-high fence.

This was not what the rider had intended, and you're probably wondering what happened next. Well, there is some good news and some bad news to pass along.

The good news is our Soldier was wearing a helmet, so his "nugget" survived to absorb the lesson. The bad news is his face shield broke and carved a divot into his forehead. He also broke his wrist and one of his fingers — injuries likely to keep him from grabbing any

motorcycle levers until he gets the proper training.

The report observed that (over)confidence does not overrule a rider's requirement to get Motorcycle Safety Foundation training and be licensed. Therefore, while this Soldier's Class C was distinctly better than a Class A, it definitely did not reflect a passing grade! <<

■ A Soldier died when he fell asleep while driving a six-wheeled moving truck, went off the road and up the side of an overpass embankment and struck a bridge. The Soldier was on permanent change of station leave. The Soldier was wearing his seat belt and had conducted a risk assessment using the Travel Risk Planning System, which indicated his risk was LOW.

HAVE YOU EXPLAINED TO YOUR SOLDIERS THAT DRIVING FATIGUED CAN BE AS DANGEROUS AS DRIVING UNDER THE INFLUENCE?

POM



CLASS A

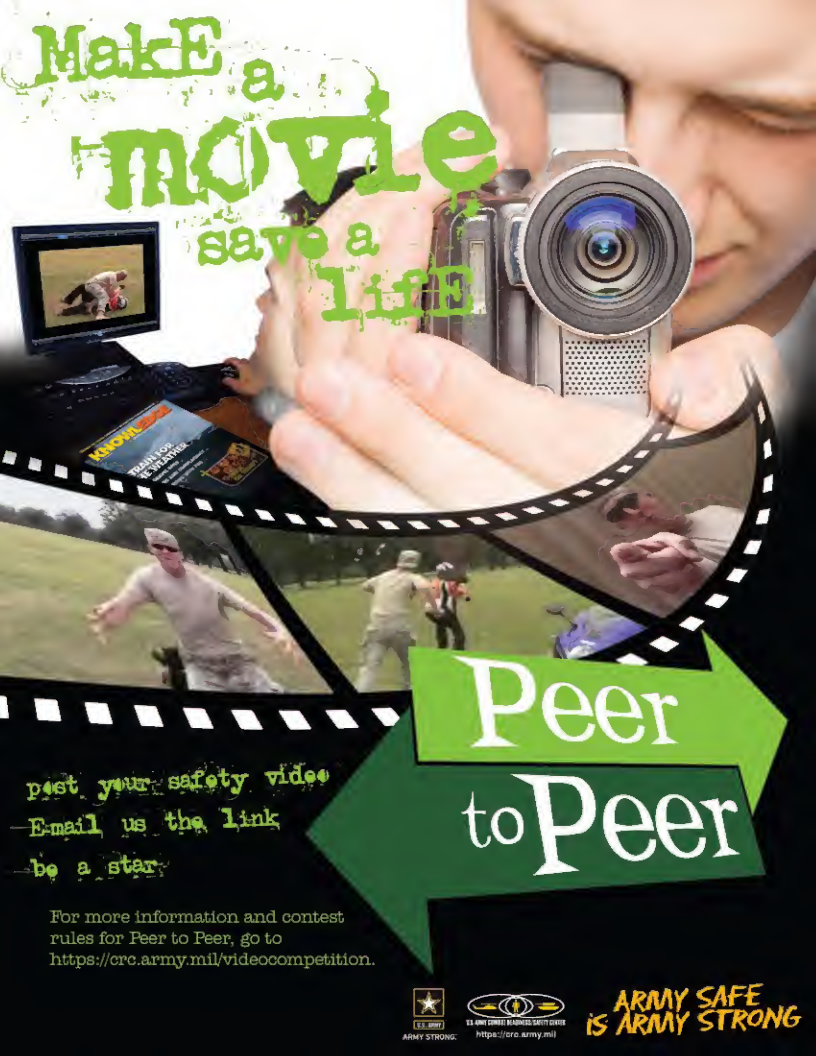
■ A Soldier was operating his motorcycle when he collided with a vehicle making a U-turn at an intersection. The Soldier was transported for treatment, but died at a local medical facility. The Soldier was wearing his helmet and full PPE.

■ A Soldier was operating his motorcycle when he left the roadway due to undetermined reasons, crashed and was killed. The Soldier was wearing his helmet and PPE.

■ A Soldier was operating his motorcycle when he contacted the curb while negotiating a curve. The Soldier was thrown from the bike and pronounced dead at the scene. The Soldier was not wearing a helmet or PPE.

Editor's note: Information published in the accident briefs section is based on preliminary loss reports submitted by units and is subject to change. For more information on selected accident briefs, e-mail safe.knowledge@conus.army.mil.

Make a
movie
save a
life



post your safety video

Email us the link

be a star

For more information and contest
rules for Peer to Peer, go to
<https://erc.army.mil/videocompetition>.

Peer
to Peer



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ARMY SAFE
is ARMY STRONG



**Don't be
a baby.**

**Take the keys
and be the
designated driver.**

**DON'T HESITATE
DESIGNATE!**



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<https://crc.army.mil>

**ARMY SAFE
IS ARMY STRONG**

safety always in season

safety tips

- Always use a safety harness while climbing up or down a tree and while in the treestand.
- Always use a haul line to raise and lower gear.
- Only use a treestand approved by the Treestand Manufacturer's Association.
- Study manufacturer's recommendations before using any equipment.
- Avoid hunting alone, tell someone at home where you will be and carry a cell phone.
- Inspect equipment before every trip.



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